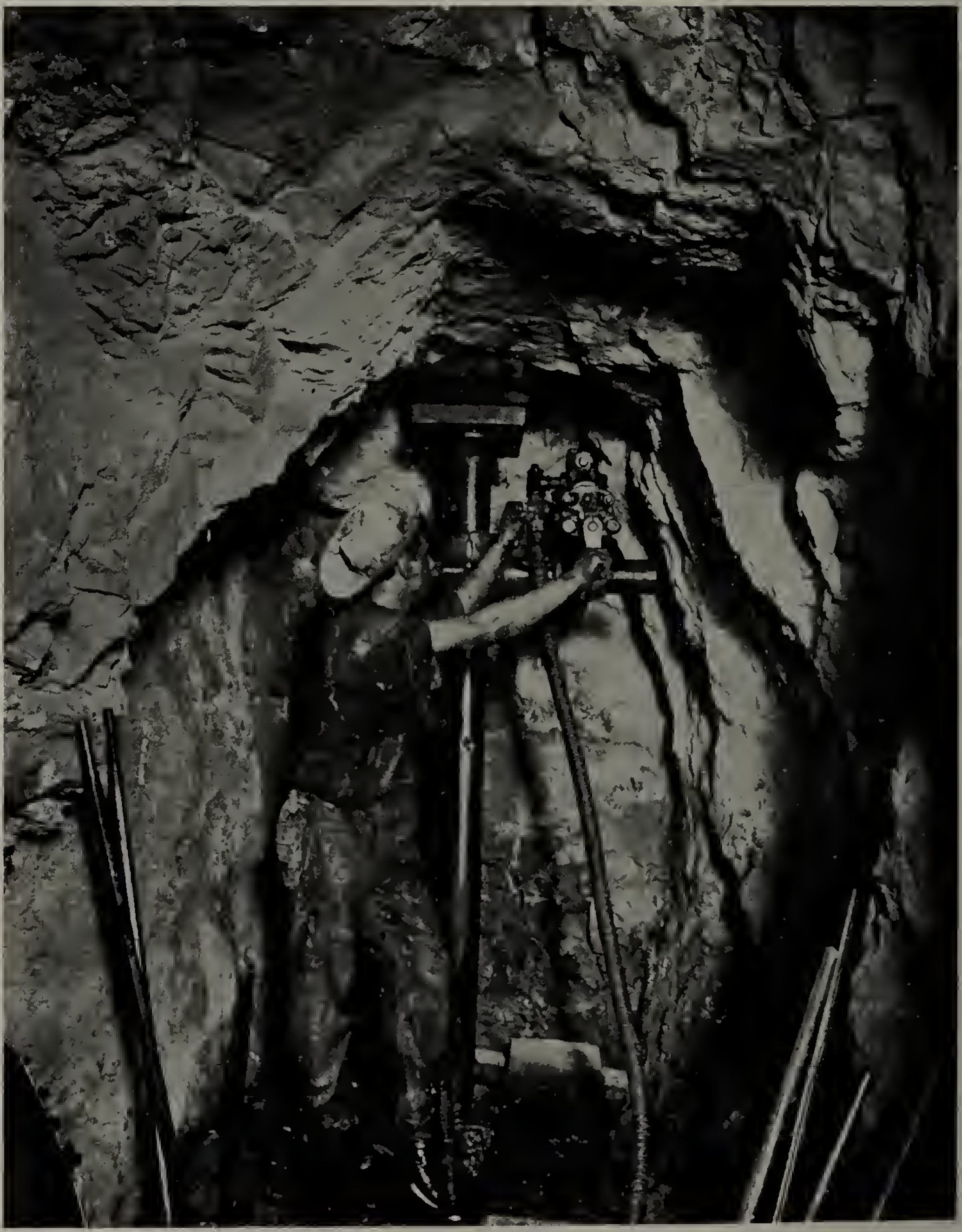


THE MAN BEHIND *By Humphries Photo Co.*

The
Photographic Times

VOL. XXXIX SEPTEMBER 1907 No. 9

MINING PHOTOGRAPHY.

BY W. R. HUMPHRIES.

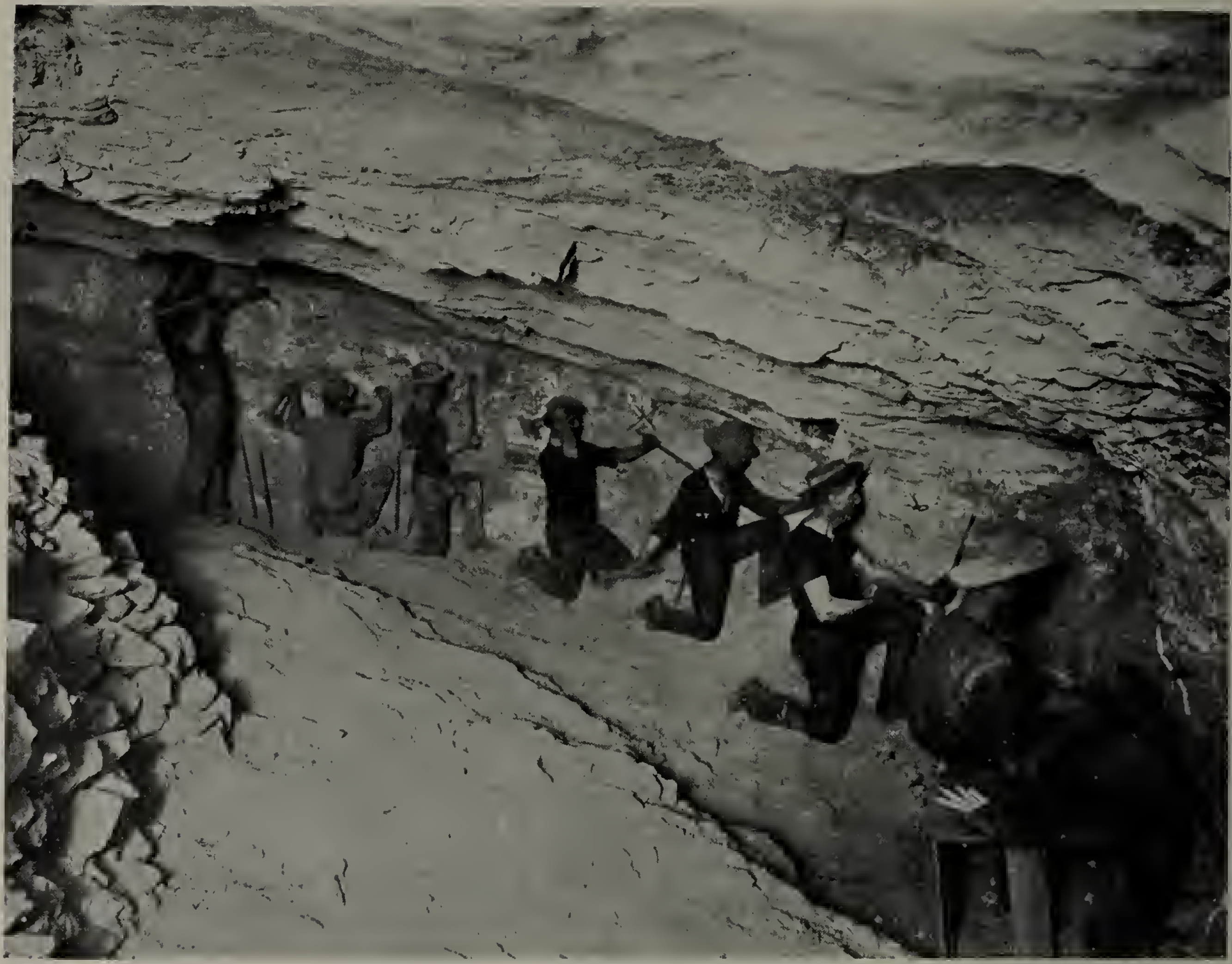
(Illustrations by the Author.)

MINING photography demands that the photographer who would be master of it, and he must be that to be of value to his clients, shall be not only past master of the photographic art, but must have a fairly thorough knowledge of geology and mechanics as well. He must know the "patter" of the business and be able to distinguish for instance the difference between hanging wall and foot wall, between granite and lime porphyry and country rock; between shaft and tunnel; be able to recognize a crosscut or drift or winze or open cut when he sees it; recognize at a glance a hoist, a compressor or a pump, distinguish between ores found near the surface in kidneys or pockets and those found at greater depths, or at the "contact;" have an eye keen for "float" and an eye equally keen to trace it to the "Mother lode;" in short the mining photographer to be thoroughly up in his business must have a good working knowledge of it if he would be of that value to his client that will make him indispensable and enable him to command the compensation that always is the concomitant of expert service.

Within the past few years the value of photography as an aid to mechanics has come to be recognized by those engaged in constructive, industrial enterprises large and small. Nowadays every architect and building superintendent, every railway engineer and contractor, every mine manager, in fact everybody or nearly everybody engaged in construction work of any kind has his field photographer on his pay roll, or retained for service at stated periods, whose duty it is to from time to time photograph the work at hand in order that indubitable evidence may be had of progress made and of present conditions. These photographs are carefully filed, sometimes in several places, and furnish a complete pictorial or photographic history of the work done.

Many uses are made of the photographs thus obtained, often at a cost so great as to make old fashioned railway builders gasp with astonishment and make them inveigh, under their breath, against the extravagance of modern methods.

There are two principal uses to which they are put—one to furnish the officers and directors, of a railway or a mine,



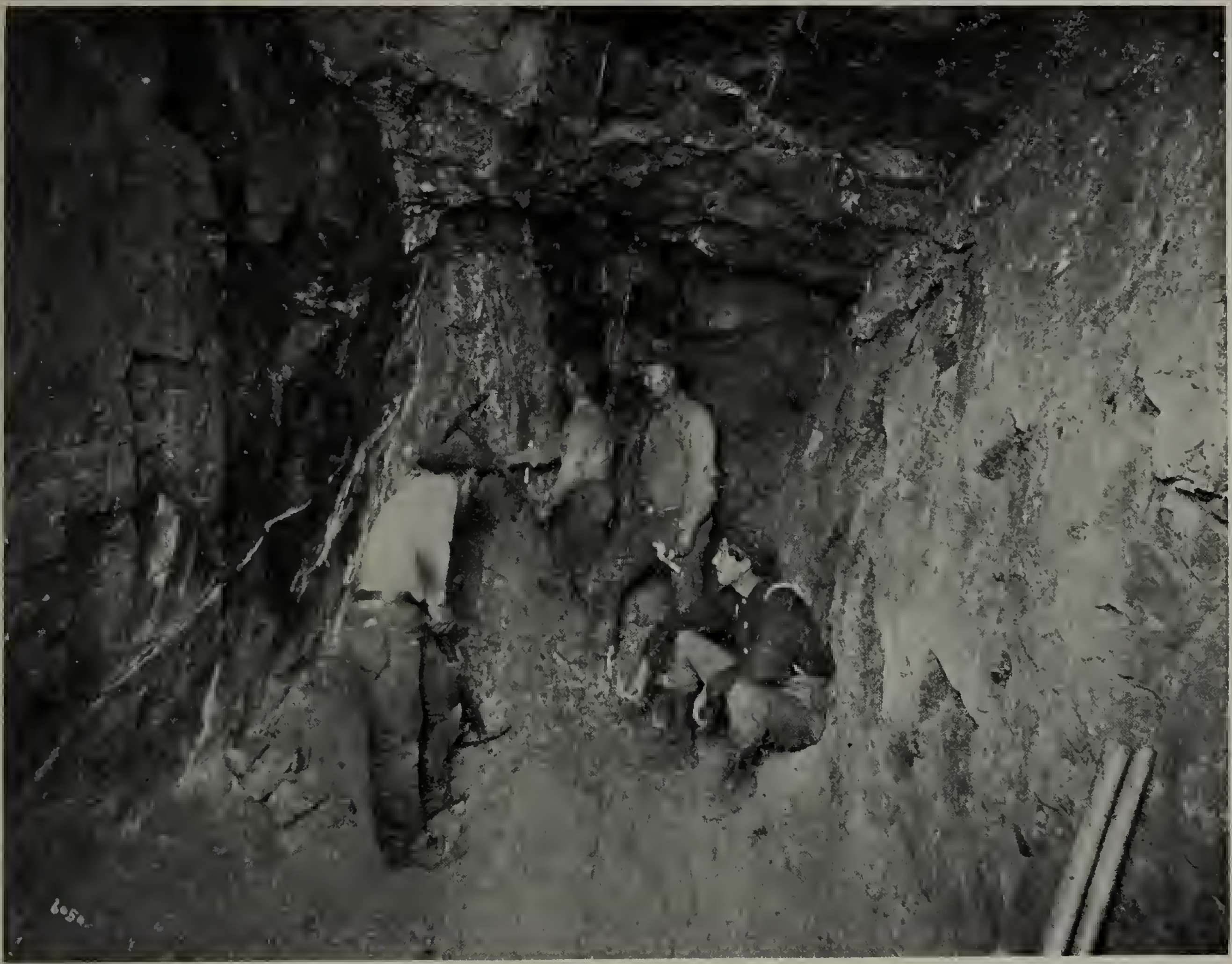
HAND DRILLING. *Shows dip of Vein, width of Vein; also Hanging and Foot Wall.*

who are usually located many miles from the scene of operations, with an idea of what their subordinates are doing and the other to enable a general manager or superintendent to keep tab daily, weekly or monthly, as the case may be, on what the various crews or gangs of workmen may be doing to earn the money paid them.

But mining photography, while a branch of field, or as it is coming nowadays to be called, industrial photography, requires that those who profess it be something more than mere manipulators of cameras. As said at the opening of this article he must not only be a photographer but a geologist and mechanic as well. And that is not all. Mines as a rule are located far from the centers of population. They are often found in well nigh in accessible places to reach which requires days of travel with all of the hardships incident to life on horse or mule or burro back, with nights spent in the open often in the snow or rain, and with a food ration not over plentiful and confined as a rule to beans, bacon and coffee. He must not only be a photographer but a hardy frontierman.

When the prospect is reached then the knowledge of geology as applied to industrial photography comes into play. Weary walks with heavy camera and plate-holders must be made, over ground the roughest, in order that the best possible views of the best possible showings of the out croppings and geological formation may be obtained without waste of any of the necessarily scanty supply of precious plates.

The prospector who employs you probably does so in order that he may com-



FLASHLIGHT *Showing width of Vein and Walls.*

pile and illustrate a report which will be so convincing that when it is shown the capitalist in New York or some other eastern city it will cause him to become interested in the property at once and furnish money for its development.

Of course your camera cannot be made to "see" any further into the earth than can the naked eye nor so far as I have been able to find, has any photographic process been discovered that will show the mineral value of the rock photographed, but your camera if intelligently manipulated will show in a manner that cannot be questioned every surface indication and give a prospector, purchaser or investor a clearer idea of the property than would pages of unillustrated descriptive matter.

We will suppose the capitalist has been interested. We will pass over your return to civilization with your plates nor will we dilate here upon the worries incident to that return trip, when every time your pack horse stumbled you wondered whether you would succeed in getting an unbroken plate into your dark room. Some day I hope to be able to write a book of my adventures as a mining photographer. I believe it would be interesting to my sister's children or mine if I am ever fortunate enough to have any.

However, the capitalist has become interested, the work of development has begun and your services are again called into requisition to record with the truth telling camera the progress of the work. Buildings are erected and photographed; machinery is installed and that must be photographed; shafts are sunk, tunnels are driven, drifts and crosscuts at vari-

ORE TRAIN, NACOZAN, SONORA, MEXICO

ous levels are run, bodies of ore are stoped out and carried to the dumps atop, and weekly or monthly the indisputable evidence of the work done is forwarded by you to your client.

All this is not as easy to read of or to write of it. Many dangers are encountered. Speaking for myself I have had my share of adventures underground that I hope never to be called upon to repeat. I have climbed down the decaying ladders of an abandoned mine to the depth of nearly 700 feet, till stopped by water, Heaven knows how deep, carrying camera, tripod, plate holders and flashlight outfit. Views were wanted of every cross cut and drift and winze and even of the water and stops had to be made at every level to get them. You who read this and are familiar with the danger of flash lights under the most favorable circumstances can appreciate the danger that attended the use of the flash light in that old abandoned mine where deadly gases, might any time be encountered. My experiences in that mine will fill an entire chapter or maybe two in that book I have threatened to write. It would need more space than I will be given here to describe the feeling that flashed over me every time a round of that old ladder broke beneath my weight, and my sensations when I came to the water hundreds of feet deep perhaps and into which I would have fallen had I lost my grip on the ladder.

It may be some consolation to you (it was to me) to know that I was well paid for that job and that as a result of my photographic showing capitalists were interested in the property, machinery was installed, the water pumped out, and the mine is one of the greatest silver and lead producers of Mexico to-day.

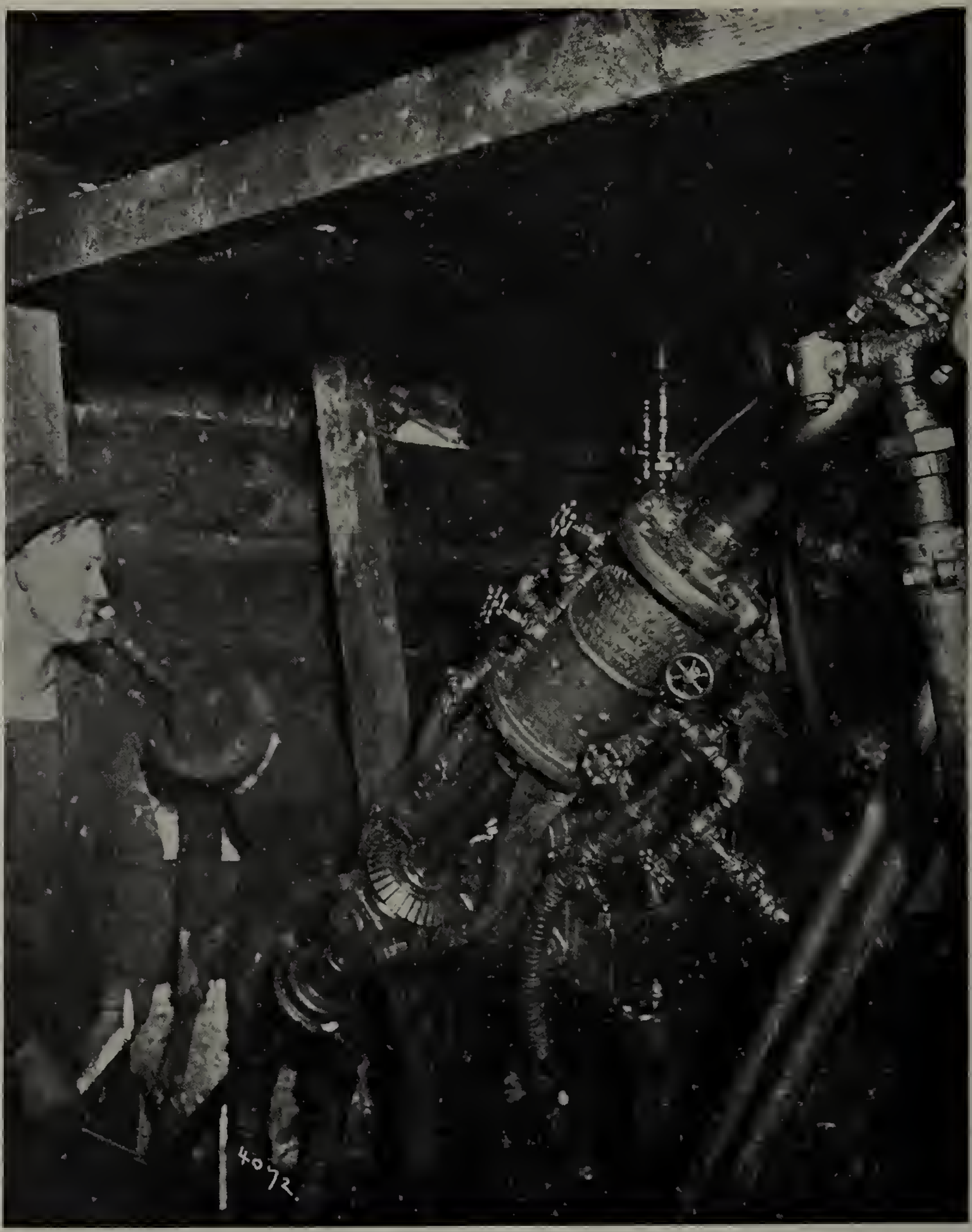
In another mine in the State of Chihuahua, in Mexico, I spent days trying to get flashlight photographs of wet workings. Powerful pumps had been installed and every day the engineers promised lower water, but the promise was never fulfilled. Upon developing one of my plates I found the cause. A flashlight of a cave that had remained unexplored because of the depth of water it contained, revealed a flood pouring in through a crevice in the hanging wall. I showed my find to the Superintendent who working on the clew given by the camera found that practically every drop of water being raised by the pump to the top and poured into the old bed of a creek was pouring back into the cave and thence into the mine, a sort of endless chain of water as it were.

The pumps were stopped and a flume was built to carry the water farther down the mountain side beyond the crevice in the creek bed. When the pumps were again set in motion the mine was rapidly emptied and a splendid producer restored to the commercial world. Had it not been for the tell tale camera it is fair to presume that the fault in the wall of the cave would not have been found and the operators discouraged by their failure to lower the water would have given up in despair and what has proved to be a valuable mine abandoned forever.

I don't know that in that case my fee was in proportion to the service rendered though it was more than I had agreed upon when I took the job. I was younger then than I am now and perhaps was not as diligent in looking after my own interests as I should have been.

I have frequently been called upon to

A TYPICAL MINING CAMP, BISBEE, ARIZONA

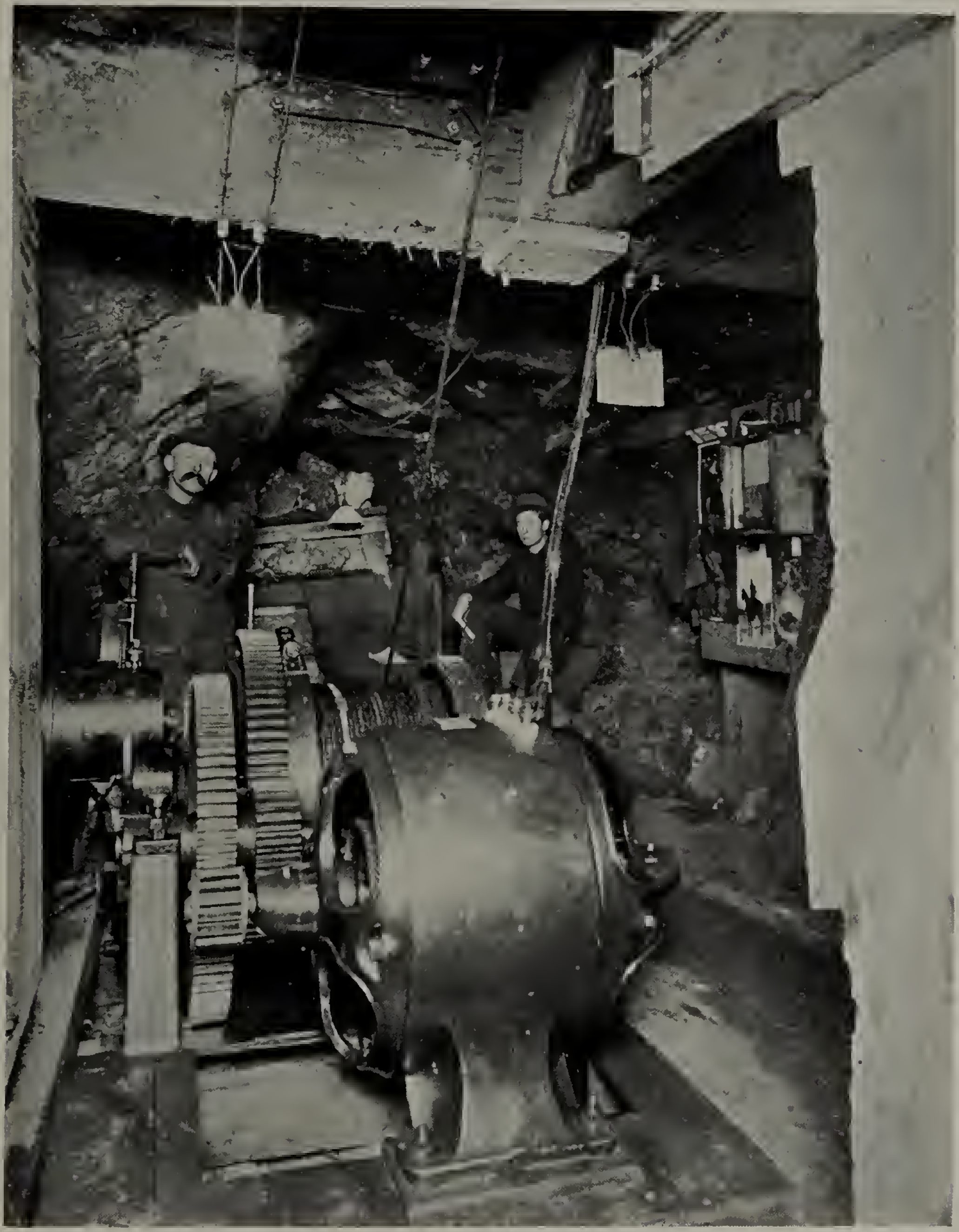


WORKING IN CLOSE QUARTERS AT BISBEE, ARIZONA, DIAMOND DRILL

photograph the scenes of accidents in mines and in the prosecution of that work have seen some grewsome sights. A "shot" fails to go sometimes, the miners waiting atop or in some convenient drift have missed their count, a mucker's pick is driven into the unexploded cartridge and when the gas is blown out or it has escaped of its own motion or through natural draft, I take a flashlight photograph of the dead and wounded as they lie. Sometimes it is rather trying on the nerves, but it must be done.

Of the value of photography in case of accident I will treat in another paper on "legal photography," but I mention the incident recorded above as illustrative of the various parts a mining photographer plays in his line of duty.

Mining photography is as yet in its infancy, but its value is rapidly coming to be recognized. A mining engineer, who represents in New York one of the heaviest dealers in copper properties in the world and whose duty it is to see every man who calls with a copper proposition before allowing his client to



ELECTRIC HOISTING PLANT UNDERGROUND, BISBEE, ARIZONA

be bothered, told me recently that 95 per cent of the men who called on him with propositions had such meager and badly prepared prospectuses or reports that he could not waste his clients' time by allowing them in to see him. His statement interested me and he explained that probably every man turned down by him would have been given an audience had he had a carefully prepared and reasonably profusely illustrated report or prospectus. The men were not turned down on the merits or demerits of their properties but because they had nothing to show that they had anything that would make it worth while to investigate.

To those of the readers of this who are members of the craft and who are located in a mining country this article may open up a new line of endeavor. If it does and it proves profitable I will be glad.

THE OLD ORCHARD *By R. E. Weeks*

(First Prize, September Competition)

THE MONTHLY COMPETITION.

The value of a print competition and the judgment of the picture, depends upon first the ability and honesty of the judge or critic, and secondly upon the receptivity and willingness of the contestants to profit by his criticisms and abide by his decisions. The ability to judge pictures is not however born, a knowledge of pictures can be acquired by much study and hard work; the ability to *produce* pictures is another matter. Some people, unfortunately too few, have an instinctive appreciation of form and color, and are able even when untaught to produce pleasing compositions. Fortunately for the majority of us, not divinely gifted, we can gratify our longings to aid in the production of the truly beautiful, by study and application, and while not able to produce masterpieces galore, can at least evolve creations in our chosen medium worthy to be classed as pictures, and a source of gratification to the beholder. These words are not written for the genius, for if he be a genius, he will by sheer force of such genius, arise beyond the necessity of our judgement and teachings. There have been many books written in the attempt to teach the making of true pictures, some of them treating the subject broadly, and applying to all the arts, and others written solely to aid the photographer. These books are all of value, and while we cannot agree with all the teachings of all the books each has sufficient merit to warrant careful study.

Pre-supposing a certain knowledge of the principles of composition, how do we go about making the pictures, do we select the picture, or does it select us? Suppose we are wandering a-field with the camera, are we seeking a combination of form, of light and shade that shall express some certain emotion or are we merely seeking the beautiful? Most of us are seeking the beautiful without previous thought as to just what our picture or pictures shall express. So it comes about that our picture usually selects us—just stands out upon our vision, and compels the thought "you beautiful thing, I must preserve you for future happiness"—this if we possess the truly artistic temperament. Otherwise—"that looks pretty good, guess I'll make an exposure." This in a measure explains the difference between a picture and a photograph. The trained mind sees the picture in the rough and true to training and instinct seeks to preserve it in its most pleasing and entrancing form. Here are objects to be removed or subdued, there a mass of shadow or higher tone, or the addition of a line of opposition or contrast will help perfect the picture and so harmonize all parts of it, that when finished, it will produce the same sense of pleasure it did when first viewed, and before its crudities have become apparent.

A YOUNG VILLAGER *By William Wheelock*

(Honorable Mention September Competition)

Every month brings photographs to your critic's study, that could easily have been made pictures had the maker given his subject the attention it really deserved, just the slight subduing of a light, or the addition or elimination of a line, just a step to the right or left would have worked wonders. Before you open your lens, think hard, go over every point and finally when everything seems just right, make your exposure. Then after developing make a trial print and think some more. If you have a friend on whose judgment you can rely, ask him

OPHELIA *By Hana Robison*

(Honorable Mention September Competition) to criticise it and then if possible make another print modified to suit him; he may be wrong, but you will have learned something—at least to think a little harder. Thus endeth the lesson, and now you may learn the decision of the judges for this month, and possibly a few reasons for their choice.

The first award goes to R. E. Weeks for his entry "The Old Orchard." While every limb and leaf and blade of grass is not microscopically sharp, is not the picture all its title implies? Upon viewing it can you not bring to mind some similar place familiar to you in the long ago, and does it not bring a feeling of rest and satisfaction to you—if so its mission has been fulfilled. True also the picture shows neither flower nor fruit, yet *your* orchard possessed them, and so in your imagination you inhale the fragrance and pick the fruit—and perchance memory brings to mind the time when you "hooked" apples in some one's orchard, and then fled unpursued to peacefully devour them in the old swimming hole just around the bend. To the imaginative mind, the impressionistic picture possesses a charm—that is its license for existence. The data furnished with this entry is as follows: Made in May, 5 P. M. Exposure 1/50 second on Medium Iso plate, print on Platino Bromide.

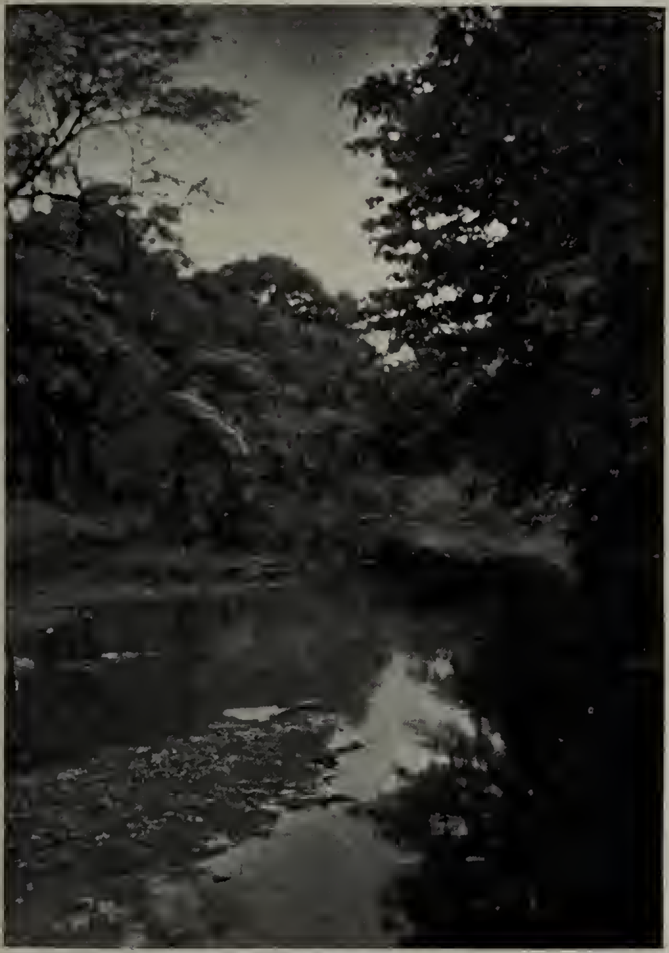
The Second Award goes to a subject entirely different in nature, yet equally pleasing. Ophelia has been portrayed many times, successfully, and otherwise, but we feel that Hana Robison has been successful in affording us a pleasing and adequate portrayal of Shakespeare's creation. The data are as follows: Made in June by light of ordinary window. Time 11 A. M., one second exposure, 1 B Goerz lens wide open. Print on toned Monox paper.

As no print submitted is perfect and can be criticised for some short coming, it is sometimes rather difficult for the unsuccessful contestants to realize just wherein the winning prints are superior to their own. It is true that often there is just a shade in favor of one print over another, and the final selections are made only after an extended discussion and argument. In case of close decisions, the print that will reproduce the best is favored, as a poor reproduction is not only of little educational value, but is decidedly detrimental to the appearance of the magazine. This, however, has nothing to do with the selection of the third award, but is merely written as explanatory.

"The House on the Hill" by C. R. Tucker received the third award, and is certainly effective in its delicate gray tones as well as from the standpoint of composition. The principal fault is in the rather bare foreground. Accentuating the dark mass in the lower left hand corner would have improved the balance. Data, made in May, 1907, at noon, good light, exposure 1/5 second through Ideal Ray screen. Plastigmat lens, stop F8. Cramer Inst. Iso plate. Printed on Argo.

The Fourth Award brings us into the realm of straight portraiture and we believe that the gum print of "A Young Villager," by William Wheelock, will find favor with you. The subject is just a plain boy, no striving for any special effect either of lighting or pose, simply an attempt to produce a natural picture of a good healthy youngster. Posing and spacing are good and the successful subduing of all the figures so as to hold the attention to the face is especially noticeable.

Data with this entry. Made 4 P.M., July 6th, good diffused light, R. R. lens, 10½ inch focus, stop F8, 1/ 15 second exposure. Orthonon plate, printed on Crossed Swords Pigment paper.



NOCTURNE *By Paul L. Anderson*

(Honorable Mention September Competition)

The Fifth and final award goes to Paul L. Anderson for his landscape study "Nocturne." His subject is commonplace in fact ninety percent of all pictures must be, but good judgment in selecting the view point and time of day can produce a true picture from any subject. In this instance, the title helps out the picture, and just between ourselves, a well selected title is often a deciding point in close selections. Data furnished: Made June 14th, 7 P.M., dull light, stop F. 22.6, 60 seconds exposure, made with single combination of Anastigmat lens, 15½ inch focus. Plate Cramer Medium Iso, Iscchrom ray filter. Print on Willis and Clements Sepia Platinum.

It has been suggested that in addition to criticising the winning prints, we also criticise some of the unsuccessful ones, comparing them with the winners and showing just wherein they are lacking in merit. We feel that this is an excellent suggestion and will carry it out, if you will mark on the print you send in the words "May be criticised." The manager of our make-up department has been requested to incorporate this in his competition notice, and if the idea meets with your favor, we will carry it out to the best of our ability. Let us hear from you often with suggestions or criticisms, as without you we could not exist.

THE HOUSE ON THE HILL *By C. R. Tucker*

(Honorable Mention September Competition)

FROM THE VERY BEGINNING.

BY C. H. CLAUDY.

In three parts—Part Two—Making Exposures.

THE problem which confronts the novice in photography at the very beginning is that of "what exposure shall I give?" And it is not a problem the answer to which lies ready to hand, waiting only for some one to come along and pick it up. For exposures depend on a great many different things, the number of which alone is enough to discourage the seeker after photographic skill. Among the factors on the proper combination of which correct exposure depends may be mentioned the following: Time of year, time of day, speed of plate, speed of shutter, speed of lens (otherwise its relative opening) color of subject, distance of subject, kind and color of light, state of air, whether clear or murky, kind and number of clouds and so on.

On the other hand, the beginner is not turned loose in a wilderness of things he does not understand, and told to go ahead! There have been deduced certain rules—arbitrary rather than exact, and until experience takes the place of book learning in the work, the beginner can do no better than follow these.

Photographically, a lens has two dimensions. It has a focal length and it has a relative opening. The focal length can be roughly stated as being the distance the lens is from the sensitive plate or film when the camera is focussed on some distant object—the relative opening is the size of the lens across its face in proportion to this focal length. This relation is expressed as a fraction with the letter "F" standing for focal length. A lens, therefore is said to "work" at F8 or F16 or some other such combination, meaning that the diameter of the lens is one-eighth or one sixteenth of its focal length. It is important to you to know what the focal length and working aperature of your lens are, and the man you buy it from should be able to tell you. If he cannot, write to the manfacturer of the camera and ascertain in that way, or, with a small foot rule, measure for yourself the diameter of the lens and its distance from the plate when the camera is focussed on some distant object and compute it from the figures thus obtained. On all "fixed focus" cameras—cameras costing five dollars or less, the lens is never larger than F16. On more expensive cameras with lenses in brass shutters, a scale, called a diaphragm scale, will usually supply the information. Unfortunately, however, there exists another misleading system of marking lenses in this country called the Uniform System and all shutter markings not preceded with the letter F are usually of that system. They are, therefore, given below with their equivalents.

f. 8	f. 11	f. 16	f. 22	f. 32	f. 45	f. 64
U.S. 4	U.S. 8	U.S. 16	U.S. 32	U.S. 64	U.S. 128	U.S. 256

Now we will get to the meat of all this. Never try to take snap shots with your camera except in sunlight if your lens is any smaller than F16. There may be some exceptions to this rule—in fact, there are several, but at present we are dealing with essentials and not with exceptions. Get that firmly fixed in your mind—no snap shots except in bright sun light with a fixed focus camera with lens no faster than F16 and you will have made the first step towards a success in learning to make exposures.

It should of course be understood that sunlight is to be shining on the object to be taken—it is perfectly possible to be in the house and take a snap shot of something out doors in bright sun light—it is impossible to stand in bright sunlight and take a picture—a snap shot—of something or some body in a house.

I suppose more beginners have failures from a lack of knowledge of the capabilities of their instrument and what may be expected of it, than from any other cause. Some try to snap shots late in the evening—very early in the morning, in the house, under awnings,—even at night, and blame everything but the right thing when they get no results for their pains. With such a camera as is used here as a text to preach upon—the box costing in the neighborhood of five dollars, and having a fixed focus lens with a working opening of F16, never attempt to make snap shots before eight-thirty or after four-thirty in bright sunlight in summer, and not before ten or after three in winter. To this rule also there are exceptions but they can be learned in time.

One of the hardest things the beginner has to learn is the difference between the visual brightness of light and its photographic brightness. Any one can see that the light is brighter in the sun light than in the shade of a tree but few beginners realize that there is much of a difference between the light under a shady tree and in a house with windows open. Yet the light in any house, even a bright one, is almost invariably at least a hundred and often several hundred times slower, photographically, than the light under a shady tree out doors.

In the same way it is difficult for the beginner to understand why he should wait until eight-thirty in the morning in summer before attempting snap shots. When the sun comes up in a cloudless sky it looks as bright and shiny as it does when it is several hours old. But the color of the light is really yellow and red, although it doesn't seem so unless there are white clouds for the light to shine on, when we have yellow or red sunrises or—the same thing applies to the other end of the day—red or yellow sunsets.

Now red and yellow are two of the slowest colors to make any impression on the photographic film or plate. They require more time to make their impress—consequently, when the sunlight is mostly composed of red and yellow rays—to speak accurately, when the red and yellow rays of sunlight are the principal ones to reach the earth, it takes more time to make a picture, and so, generally speaking, snap shots with our little fixed focus box and relatively slow lens, are impossible. In winter time at least in latitudes of the United States and England, the sun is so much farther south than in summer and his rays strike the earth at so much more acute an angle and thus give so much larger a proportion of the red and yellow or non-actinic rays, that snap shooting has to be put off until later in the day to counteract the impoverished condition of the light.

But just because you cannot take snap shots early and late or in the shade, is no reason why you cannot take photographs. Such pictures are made by what is called a time exposure—that is, light is allowed to reach the plate through the lens during an appreciable interval of time—a snap shot being an interval so small that no human sense can detect or measure its duration, snap shot times are determined experimentally by special scientific apparatus.

Making a time exposure is of course a matter of judgment as to value of the light at hand. There is absolutely no short cut to this knowledge by means of experience that I know of, with the possible exception of the use of an exposure meter—a little device which measures the intensity of the light by the time of darkening of a piece of sensitive paper to a matched tint. I should strongly advise any tyro to get and use such a device, or to obtain a copy of Mr. Steadman's little book on timing exposures with Solio paper—the book can be obtained from the Eastman Kodak Co. However, there are tentative suggestions which may be of some value. In making your first interior pick out a bright room with two or more windows and point the camera away from the windows—so that the windows are not in the view. Have them all wide open as to shutters and screen and roller shades. Have the camera on a table, chair or tripod support. It should not be necessary, but experience tells me that it is to say "don't try to hold the camera in the hands for any kind of an exposure but a snap shot." Certain failure is the sure result. Set the shutter for a time exposure according to the directions which came with it. Time the exposure with a watch, and for a first experiment try one minute with the lens stopped to F16. The result will tell you whether you gave it too much or too little time—if too little the resulting negative will have a great deal of clear glass or film showing with no detail in the clear parts—if too much, which is hardly likely to happen, the whole negative will be very black and dense.

Time exposures out doors are another story—with the same stop that you use for snap shots they will range from a quarter of a second—which is about as fast as you can open and close the shutter, to two or three seconds, which is about as long as time exposures are usually made outdoors under ordinary circumstances.

I feel as if I ought to offer an apology for not being more decided and saying dogmatically "do this" and "don't do that" but whenever I decide to say that thus-and-so is so, some experience in my years of experience rises and confronts me and calls me a liar. There are exceptions to almost every rule, in photography or out of it, and I trust I will have my reader's indulgence for remembering them when you, my readers, get so far in the work that you run across them. Of course there are times outdoors when time exposures may run into minutes—the statement I made just now applies to but ordinary everyday work and not to exceptional conditions.

Not long ago I wrote for the PHOTOGRAPHIC TIMES a story in six chapters on "Getting Results." I cannot better the advice I gave there, but it will bear repetition, and possibly, amplification—obtain somehow, from some one, one or more good negatives. Get them from some amateur friend who knows the ropes—get them from your dealer or from the local professional. By having these on hand you will know how to judge your own results. If you haven't got them, and have access to no one to whom you can go for advice, how are you going to tell when you have and when you haven't succeeded, as you should succeed?

I should also suggest, as I did before, having the first attempts developed by some one else—it is enough to do to learn to handle the camera and to judge light and make exposures, as a starter—when experience to some small degree is back of you, is full time to start on the subject of development for yourself. However, that time need not be long, and in the third and last paper of this little series I will endeavor to show you the entrance path to the pleasant labyrinth of development

Editorial Notes

A writer in a recent number of one of our contemporaries in dwelling upon the subject of economy in photography advises the amateur to make up his own solutions, making the statement that the ready prepared solutions cost ten times as much as when the amateur prepared them himself. This may possibly be so if the amateur compounds his solutions with the cheapest (in price) chemicals he can procure. But, the writer of the article referred to evidently overlooked the question of quality of the chemicals used.

When you purchase ready prepared chemical preparations made by the man or company who make the sensitive products you intend to use them with, you pay for *more* than the mere chemicals and the cost of compounding them. You pay and should be willing to pay a certain percentage for insurance that the purchased preparation will afford you the best possible results.

Unless you are an expert chemist, and mighty few amateur photographers are, you cannot detect the difference between pure and impure chemicals, and unless you can procure chemicals absolutely pure from deleterious substances you have no means of knowing whether the solution you prepare is fit for use or not. Unless you are doing a large amount of work, and have had considerable experience in compounding chemicals, you will find that the chemical preparations put up by reliable manufacturers are cheaper as far as results are concerned, if not cheaper in cost. It is certainly not economy to save five cents on a package of developer, and obtain poor results on a gross of paper.

At the time of writing these lines it's *hot*—and the weather man promises to keep it up. This naturally brings to mind hot weather troubles and difficulties, and the simplest and easiest methods of getting around them.

Just now we are all pretty actively engaged photographically, and the dark room and printing frames are receiving a good deal of attention. The dark room in summer is a most uncomfortable nuisance, and unless we take extra precautions, is most likely to afford us a number of costly mishaps, from heat, fog and other tribulations. If you still stick to the old hand method of dark room development, the maintenance of proper temperature for your developing solutions is most important. One of the handiest things we know of for this purpose was suggested by Mr. Jeffcott in the last number of the *American Annual of Photography*—that is—an old hot water bag filled with cracked ice. This can be placed under the developing tray, and the proper temperature easily maintained without danger of diluting the developer. Of course the easiest solution of all dark room difficulties for either plates or film, is tank development, but if you are not already a convert you soon will be without further editorial platitudes.

The question of warm weather printing comfort is easier of solution, as of course with developing papers you are not limited to a close or confined space for working. The same old hot water bag with the cracked ice will come in in good stead under your developing tray for paper.

Be a bit cautious about employing any of the numerous expedients for quick drying during warm weather, as you are very apt to suffer from a goodly number of puckers and frills, and unequal density. Dry your negatives where there is a good current of air, and if you *must* handle them while drying, be sure and replace them in the drying rack in the same position as they were before. These and many more suggestions will be found in most any instruction manual, but we are apt to forget or grow a bit careless till the loss of a batch of badly wanted negatives refreshes our memory as to the necessity of observing these simple precautions.

* * * *

How about the advertising sections of the magazine, do you glance over them every month and keep yourself posted on the new things, or do you just skip them and confine yourselt to the reading section? If you skip the advertising section, you do yourself an injustice. While it is true we endeavor to give all advertisers adequate reading notices regarding their new products, it is obvious that we cannot mention them all each month.

Were it not for the support afforded the magazine by its advertising pages, it could not exist, exactly charging about five times its present subscription rate, this is true of all other magazines as well, and as the manufacturers by their support make it possible for you to receive a periodical for less than the cost of paper and printng, do you not think that you should show your appreciation by reading their announcements? It is mutually beneficial.

MONTHLY FOREIGN DIGEST.

TRANSLATED BY HENRY F. RAESS.

Organic Preservatives for Sodium Sulphite.

It is well known that sodium sulphite in solution rapidly absorbs oxygen from the air. Wilhelm Weissenberger who investigated the matter found that certain organic compounds retarded this to such an extent that a 5% solution remained unchanged for six months. He found that 4.0 gms. (60 grains) of mannite, or 5% of glycerine added to 100 c.c. (3 1-3 ozs.) of a 5% sodium sulphite preserved the solution for the above length of time.—*Photographische Mitteilungen,* Vol. 43, No. 24, '06.

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Physiological Action of the Dark Room.

Dr. Ocoum made a number of experiments at the Finsen Institute to determine the action of darkness and light of various colors on the blood. He found that the dark room and red light reduced the blood over 3% in amount. Remaining longer than three hours in the dark also reduced the amount of blood in the heart. On the other hand, a light bath after four hours increases the amount of blood. Bright light reduces the blood pressure, darkness increases the pressure. It is recommended that persons who are much in the dark room take sun baths to equalize the amount and pressure of the blood.—*Photographisches Wochenblatt,* Vol. 33, No. 13, March, '07.

The Preservation of Amidol with Sugar and Alcohol.

Michael Papazoglou made a number of tests to determine under what conditions Amidol solution could be kept for some days without change. He tried various mixtures of sulphite and bisulphite with and without the addition of sugar or alcohol. The best results were obtained when both sugar and alcohol were present. The following solution gave the best results.

English.		Metric.
2½ ozs.	Boiled water	75 c.c.
15 grains	Amidol	1.0
30 grs.	Anhydrous sodium sulphite	2.0
1½ ozs.	Sodium bisulphite sol.	45 c.c.
2/3 ozs.	Sugar solution 80%	20 c.c.
1/3 ozs.	Alcohol	10 c.c.

A portion of the developer was used to develop twenty-four prints, it was then placed in an open vessel for three days, after this it was again tested and found to work as well as at first.—*Photo-Revue*, Feb., '07, *Photographisches Wochenblatt,* Vol. 33, No. 14, April, '07.

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The Death of Ottomar Anschuetz.

Ottomar Anschuetz who is usually, but incorrectly credited with the invention of the focal plane shutter, died on May 30th, '07, at the age of 62 years, in Berlin, Germany. He was born in Lissa, Poland, and acquired his first knowledge of photography in his father's studio. At an early age he showed an interest for scientific photography, and when Muybridge made his first experiments in instantaneous photography in 1877, he recognized their importance and attempted to solve the problem himself, there being no suitable plates or shutters. His success was such that they attracted the notice of the Prussian Minister of Public Instruction who furnished him with means for continuing his investigations. He was then studying the movements of animals by means of a battery of twenty-four cameras whose shutters were rapidly released, one after the other. Anschuetz then constructed his "Quick Seer" (Schnellseher) which was a forerunner of our present moving picture machines. The twenty-four pictures were mounted on a rotating disc, every time a picture came before the observer it was illuminated by an electric spark. This was followed by an apparatus for projecting these animated pictures on the wall. These results made Anschuetz famous, and it gave the scientists a new method for studying movement. He studied shutters and improved the focal plane by making the slit adjustable, the patent being obtained by C. P. Goerz. In photographing animals he made some of the best studies that have ever been made. At the Breslau Zoological Gardens an arena was built for him where with infinite patience he made his studies. For years he was the photographic adviser to the Imperial family of Germany, and when Emperor William went to Palestine, he accompanied him. Later he became a photographic stock dealer, and as such had considerable influence in the trade. —*Photographischer Rundschau,* Vol. 21, No. 12, '07.

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A German's Conception of Photographic English.

Recently we received a letter and a catalogúe of photographic apparatus from Johann Riedl of Goerlitz, Germany, (a town of hustling and enterprising manufacturers in Saxony.) The catalogue is well gotten up, illustrated and printed in four languages, English, French, German and Italian. The English is amusing and often unintelligible, we append a few extracts selected at random. The letter is as follows: "I take the liberty of sending you by same post my last price—current with the polite request of your mentioning in your honored paper in the respective column, that same price—current has appeared and is being dispatched free of expense. With anticipated thanks, I am, Sir, Your Obedient servant, Johann Riedl."

Here is a description of a camera: "My newest square folding camera for the Tropics possesses all the tricks that may be found in a superior camera. Unscrew the knobs of the removal press on the prop and push back the slides. Thereby the bottom will descent a little and not be photographed on the plate. There is below on the real case a driving knob, pull it out as soon as a turning of the knob has been made. Forming again the normal objective, the running bottom is put back into horizontal position, and the slides with the props are pulled out till they snap again from themselves. At this camera the front holder may also be bent backwards and forwards, by taking out the two upper or lower screws, and by screwing fast the two odd ones. The apparatus is distinguished from other similar apparatuses by the slide of running bottom not being moved by the well known double crakandsector, but by a round tooth wheel let into the bottom, and besides, for perfect profiting of the entire length of the bellows a lengthening slide being managed on the running bottom of the apparatus and united to the slide of the running bottom. By this contrivance which has proved extremely practical, the apparatus could be made comparatively compendious."

A tripod is called a "Travelling camera stand," and a studio stand a "pedestal." "The parts of this Tripod-stand, are sliding into each other and are, made of fine white naturally polished ashtree. This stand offers besides, the advantage that the screwed on apparatus may be twined in any direction, without the stand being displaced. That is very important. The camera stand itself is put up with some action of the hand."

This about lenses: "Highly favored Moment—Objective of greatest extension as to acuteness and depth. This construction is using especially for forming sets of Objectives. I believe having to make accessible also in single specimens to the interested. Owing to the number of lenses at disposal the spheric chroma is a perfect success."

The compound shutter is described as follows: "Elastic opening and closing by means of Sector-Lamels, therefore quickest and evenest lumination. Regulation of rapidity by air-brake which in contrast to the leather brake remains perfectly steady at any weather and in whatever clime. The opening for the dull pane, as well as Time—and Moment. Takings may be done automatically without having to alter the regulation of rapidity."

A flash lamp for compound powders: "Lamp arranged for being screwed as well upon Camera-Stand. Several thousands of these lamps were taken in use of during a period of about four months. The photographer, having prepared everything for the taking will have time to hurry to the photographing spot, for being taken himself as well in society, at his club, on the skittle-ground, (the latter is a bowling alley)."

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STRIPPING AND TRANSFERRING FILMS.

THE stripping of a negative or positive film, using this term in the sense of the image-bearing gelatine, is an operation of some little delicacy, but extremely easy when set about the right way.

The usual plan recommended is the employment of hydrofluoric acid, one of the nastiest of all chemicals to handle or keep. It can only be kept in rubber bottles, and even then has a happy knack of escaping not only through the cork, but through the rubber itself, and etching any glass by which it may be standing. It has the happy knack, too, of causing intense irritation of the nose and throat, and also of softening one's nails. As equally satisfactory results can be obtained with other things, it is, possibly, as well to avoid it, particularly, too, that small quantities cannot be obtained as a rule.

In place of this we may use either the fluoride of potassium or sodium, decomposing them as wanted, or we may reject fluoride compounds altogether, and use such familiar chemicals as washing soda and hydrochloric acid.

PRELIMINARY CONSIDERATIONS.

In stripping a film there is one important consideration which must be first taken into account, and that is whether the film after transference is to be of the same or a larger size. It is possible, by making repeated negatives and positives, and stripping each, to obtain a fairly high degree of enlargement; there is, for instance, not the slightest trouble in making a one-quarter plate into a whole plate. If the film is to be enlarged, then the process is easy and can be carried out in practically one operation. If, on the other hand, the same size is to be adhered to a little more trouble is involved.

In either case, if the negative is an old one and it has been printed from or otherwise handled, it is important to free it from the inevitable grease from not overclean fingers. A bath of weak ammonia with a gentle rubbing with cotton wool will get over this trouble, and the treatment should be continued till water runs freely over the film and till, on standing the negative up on end, the water does not leave it in well-defined patches.

STRIPPING WITHOUT AND WITH ENLARGING.

Assuming that the film is not to be enlarged, the first bath is a 10 per cent. solution of formaline; in this the negative should be left for 10 minutes, then rinsed and dried. It is not actually essential to dry it, but the results are more certain. Then it should be immersed in a five per cent. solution of sodium carbonate for 10 minutes, drained, and immersed in a weak solution of an acid. Exactly what acid is immaterial, but a two per cent. solution of hydrochloric is efficient. The moment the negative is immersed in this, bubbles of carbonic acid are formed, not only on the film but between the glass and film, and by gently coaxing one corner, either with a soft brush or the finger-tip, the film will be found to lift and can be completely coaxed off the glass. It can be then transferred to a dish of plain water and washed by repeated changes and transferred to its new support.

If the film is to be enlarged, the formaline bath should be omitted. In this process great care must be exercised as the enlargement is produced by the extension of the gelatine, which means that it gets thinner and thinner, so that it is very liable to be broken. As a rule the longer the soaking in water after the stripping the greater the extension, and the latter can be increased by adding glycerine to the water.

TRANSFERRING THE FILM.

We now come to the transfer of the film to its new support, and it is as well, no matter whether this be glass or celluloid, to use a piece a size or two larger than the original negative or larger than the film after expansion. It is easier to get the film down when one has a little room to spare. The new support, which may or may not be coated with gelatine, for this is not necessary but preferable, should be slipped under the film in water, the latter gently coaxed out as flat as possible, and then two corners should be gently clipped by the first finger and thumb to the glass and the whole raised as evenly as possible from the water. Great care must be exercised in doing this as the film has a wonderful knack of sliding right off or sagging down, with consequent distortion, if the glass and film are not lifted slowly and evenly up, particularly when the surface of the water is reached. The film will now probably be floating on a layer of water on the glass and one has to get rid of the water without causing distortion or cockling of the film. This can be done either by means of stout blotting or filtering paper laid along the edge of the film, not on it, but just touching. As the water is sucked up fresh paper should be used and finally a particular point will be reached at which the glass may be inclined, so as to allow the water to drain off.

The film must now be coaxed out flat, either by blowing on it or stroking very lightly with a long and soft haired brush, and can finally be left in a horizontal position to dry.

CONTRACTING AN ENLARGED FILM.

If enlargement takes place, and it is not wanted, contraction can always be secured by the use of spirit, but the film must not be immersed in it direct. The proper way to use this is to add about one part of spirit to eight parts of water, and immerse the film for about five minutes, then pour off the mixture, and add a little more spirit—about half an ounce—and again immerse the film. By gradually adding more and more spirit the film contracts evenly and there is no cockling, and it is possible to get an expanded film back to its original size.

We have stated above that it is not necessary to use a gelatinized glass for transferring the film, and that the glass should be larger than the film. The particular purpose of these two items is that the negative should be subsequently varnished with celluloid varnish, and the latter carried well beyond its edge so that complete adherence is secured, otherwise there is a chance of the film lifting.

When a film is thus enlarged it stands to reason that the particles of silver are separated more and more in proportion to the enlargement; therefore it is necessary to intensify the enlarged film so as to obtain printing density.

THE USE OF THE FLUORIDES.

For those who prefer to adhere to the old methods, a solution of potassium or sodium fluoride, about 10 grs. to 1 oz., may be used, and the negative immersed in this for about ten minutes and then transferred to the acid bath, which disengages hydrofluoric acid. This attacks the glass and loosens the hold of the film on the latter, so that it can be easily stripped.

To use hydrofluoric acid it is advisable to soak the negative first in—

Methylated spirit	3	drs.
Water	3	"
Formaline	2	"
Hydrofluoric acid	1	"

for about five minutes, then see if the film will lift generally from the glass, which can be easily done by rolling up one edge with the fingers. Gently tilt off the solution and empty the dish—"gently" must be emphasized, because otherwise the film will float away too. Fill up the dish with the above mixture, *minus the hydrofluoric acid.*

We have described above one method of transferring. Another, equally as good, and which is particularly useful in this case, is to remove the negative film on its glass from the bath. Take a piece of hard or glazed writing paper, just dip in water and lay on the film and gently squeegee, and then lift paper and film and lay down on the new support, and strip the paper. This is a very easy method of stripping, and there is no liability of tearing a film, though occasionally a pucker may be caused which must be evened out by coaxing with a brush. Absolutely the same method as described above—that is, the one with an alkali and an acid—can be used for celluloid films, and though the description may appear somewhat formidable, the operations are really very easy.

—*Photographic News*

TRANSPARENCIES AND NEW NEGATIVES.

I KNOW of nothing within the whole range of photographic practice more fascinating than making transparencies from some of one's favourite negatives. I do not think the average novice realizes what exquisite prints—I say advisedly "prints"—can be made on an Ilford Ordinary dry plate; and it will be a print on plain clear glass too, which will astonish one's uninitiated friends and will lend itself to quite a number of uses. Fortunately, to produce a picture of unsurpassably exquisite definition, texture, and brilliancy on clear glass is just about one of the easiest things in photography.

Perhaps it does not quite occur to the amateur who is accustomed to procure such or such things to perform such or such a task, to ask why a particular article is specially suitable for a particular purpose. Thus, the property possessed by a dry plate which enables it to retain the light image transmitted to it by the lens will empower it to similarly receive a light image in any other way. Now suppose we regard a negative as a stencil plate—it really is not unlike one—and the light as the brush charged with ink. Well, then, if we place the negative on the top of a plate and expose to light, that light must affect the sensitive plate just in proportion as its rays can penetrate the stencil-like negative.

To put this into practice, furnish your printing-frame with a sheet of glass which occupies the same place as the negative. The very best of printing-frames sometimes warps or gets a little out of shape, and then if a negative is placed in it the pressure is uneven when the frame is closed, so that the negative will break; but if there is a piece of glass in front it will take the strain of uneven pressure first, and break, leaving the negative unhurt. Place the negative on the glass in the printing-frame and the sensitive plate next, this, of course, being done in the dark room, and take care that the latter has several sheets of opaque or fairly stout paper on the top; then close the printing-frame, and, laying it face down on the table, relight or turn up the gas or other light.

Under the face of the printing-frame, which is now in contact with the table, insert a sheet of card so that when you lift the frame you can do so without for an instant exposing the print to light. Then raise the frame, and holding it with the card covering it about a foot or less from the light, determine what exposure you are going to give—say ten seconds—take away the card-cover, count ten seconds, return the frame face down to the table and turn out the light. Open the frame, remove the exposed plate, and proceed to develop it.

If the exposure has been anywhere near correct, and the developer is neither too strong nor too diluted, there is something very beautiful in the appearance of the image—a positive image, remember—with all the matchless gradation which belongs to a negative. You may have to be on your guard if you have not previously developed positives, because, of course, instead of the sky first responding to the developer and coming black, it does just the reverse and remains perhaps the lightest part of the view. As to the depth to which one should develop, it depends a good deal on the purpose to which this transparent positive is to be put. If development be carried to about the same depth as when developing a negative, then after fixing and washing, if the positive is set in the window-frame or furnished with a narrow metal frame and hung against the light, it will look very well and be of just about the right intensity.

Some pictures of quite wonderful quality have been produced by printing on a glass plate—that is, making a transparent positive—and keeping it very thin and delicate, mounting it in contact with paper of suitable colour. No special transparency plate is required for this; an "Ordinary" will serve excellently, although perhaps the Special, Alpha, or Gaslight Lantern plates would be more appropriate, their special mission being of course to produce a clear positive image practically without any grain.

There is an important matter which, I believe, most people overlook or ignore, and that is the backing of all plates used for copying work for such purposes as above described. Depend upon it, that although we have been accustomed to regard "backing" as a precaution against halation with church-interior windows and high lights in landscape, the question of plate-backing comes in even more powerfully when we are bent on making a positive from a negative by contact-printing, or a subsequent negative again from the positive copy, and while, of course, very admirable results may be obtained on unbacked plates, it is advisable that backed plates be used.

Until recently I should have said that there is no halfway house between backed and unbacked plates, but I tried the plate which carries its own reducer with it—the Ilford Amauto—for making several transparencies, and was pleasantly surprised to find what a clear, bright image I obtained without a suggestion of halation or something of detail in the higher tones; so that this, besides being a "Self-Developing" plate, appears to include incidentally other valuable qualities.

New and duplicate negatives may be made from transparent positives obtained by printing in contact by proceeding exactly as before and using the same brand of plates, either backed Ordinaries, backed Lantern plates, or the Amauto. Then, by longer or shorter exposure, and by weaker or stronger developer, a negative of a totally different character and quality may be produced, still leaving the original unaltered; and in this way a negative can easily be made suitable for a printing process for which the original negative is totally unfit. There is no more delightful photographic exercise than making transparent positives from negatives, and in turn new negatives from such positives.

—*Photographic Scraps.*

CARBON TISSUE SENSITIZING SIMPLIFIED.

THE carbon process would be much more popular amongst amateurs, if it was once realized how very little trouble there need be in sensitizing tissue. Then the fact that tissue will not keep very long when once it has been sensitized would not be important; but, on the other hand, the fact that, unsensitized, it will keep any length of time in perfect condition would be felt to give carbon work an advantage in this respect over all other processes, except, perhaps, bromide printing.

There seems to be a tendency amongst "authorities" to over-elaborate the instructions for sensitizing tissue; certainly there is no need for half the details that are generally given. Take the case of time of immersion of the tissue. Some say three minutes, others four minutes, and one excellent handbook tells the photographer to time it with an egg-boiler.

Is this really necessary? I think not.

In fact, it is the reverse of necessary, since it introduces a possibility of variation which is better avoided. Either the tissue in the time given has saturated itself with the bichromate solution, or it has not. If it has not, then slight variations in the time of soaking might be expected to produce distinct variations in the sensitive tissue; and that they do do so I have satisfied myself by actual trial. But if the soaking is amply long enough for the tissue to take up all of the solution that it will, then a little more or less time in the sensitizer makes no difference at all in the resulting prints.

The only doubtful point it seemed to me was whether there was any other trouble that might be experienced when this complete saturation was allowed to take place; but up to the present I have been quite unable to detect anything of the kind; while tissue left in the bichromate solution for half an hour is not to be distinguished in any way from tissue that has only been allowed to soak for five minutes. All my own work has been done on Autotype tissue, and it is possible that other makes might not answer so well, from the gelatine coating being softer, or from other causes; but the method to be described certainly seems, with Autotype tissues, to have no drawbacks whatever.

The requirements are a few sheets of clean ferrotype plates, a dish, a squeegee, and a bottle of bichromate solution. This last I keep in the form of a saturated solution, which is approximately ten per cent. in strength. Two ounces of bichromate, as bought, are put into a pint bottle, which is filled up with water and shaken from time to time. Ten drops of strong liquor ammonia are added, and this constitutes the stock solution. The strength of the solution that is used for sensitizing will depend on the user—some like a strong and some a weak bath. My own is made by taking three ounces of the stock solution and diluting it to make half a pint.

The tissue is cut up into pieces a little larger than the negatives to be printed, and, a piece being taken, it is immersed face upwards in the solution, and the squeegee is passed gently over it once or twice in both directions. It is then turned over and the back squeegeed in the same way. This removes air bells, and when it has been done I hold the tissue up by two corners and look it over to make sure that there are no air bells on it. It is then again placed in the solution (face downwards this time), and the next piece is put in on top of it, and is treated in exactly the same way. Then another and then another are put in until all the tissue that is going to be sensitized is in the dish.

There is one point I ought to mention, and that is that one must make quite sure that the gelatine surface is limp before allowing it to rest for any time on anything else. If we take a piece of tissue and put it into a dish face downwards and leave it for two or three seconds in contact with the bottom of the dish it will adhere to it firmly, and we shall not be able to get it off without damage. It is the same thing, in fact, as that on which we rely to make the printed tissue adhere to the transfer paper. Therefore we must wait until the tissue feels limp before dealing with a fresh piece, but this only takes half a minute or so.

When the last piece of tissue is in the dish the first may have been in for ten minutes or more. There is no need to hurry things, and it should be left in for at least a quarter of an hour; if more, as I have already pointed out, it does not matter at all. The pile of tissue lying in the dish is then turned over, so that the piece first sensitized is on the top, and this is picked up, allowed to drain for half a minute, and is then laid on a sheet of ferrotype and squeegeed into contact. The squeegeeing need only be done very gently, and certainly should not be hard enough to injure the paper backing. Then, the ferrotype being stood up on one side, the next piece is squeegeed, and so on until all are done.

The tissue on the ferrotype may be left to dry in daylight in an ordinary room, and when quite dry it will be found to come off very easily and with a beautiful gloss, which enables it to come into perfect contact with the negative.

This method gets rid of all trouble over the timing of the immersion, and will be found to be a great saving of time in sensitizing, as in the old way to sensitize a dozen pieces took at least twelve times as long, as each piece had to be left in the bichromate; it was not possible, or at least not easy, to sensitize more than one piece of tissue at once. By my method the twelve pieces can be done in a quarter of the time or less, and the resulting pieces will be more uniform in quality.

The strength of bath named above may be altered within wide limits, and the speed of printing and the contrasts in the print will be altered. The stronger the solution the quicker will the tissue print, but the weaker will the print be in contrast. For negatives of the platinum" type the strength named will be about right, and I should not advise the photographer to vary the strength of his bath unless absolutely necessary, as by doing so the time taken to print is altered, and there is considerable risk of over or under-printing.—*Photography.*

Book Reviews

DAS ARBEITEN MIT MODERNEN FLACH-FILM PACKUNGEN by G. Mercator, 8 illustrations, 1907, published by Wilhelm Knapp, Halle a.s. Germany, price Mk. 1.0.

The introduction of the Premo film pack abroad met with such success that several manufacturers attempted to make something similar. As the film pack is protected by patents, they could not safely make anything exactly like it. One way to get around this difficulty was to have only one film in the adapter at a time, each film being protected by a suitable paper envelope. The latter method is used by Zeiss, Agfa, (makers of Amidol,) Rodinal, etc.,) and U. P. G. (the German Rotograph Co.) The Vidil film system is also mentioned. Instructions are given for using the various systems, including the Premo, and the development, etc., of films.

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GUIDE DU PHOTOGRAPHE DEBUTANT by C. Fabre, 1906, published by Gauthier-Villars, Paris, France, price Fr. 0.75.

This "Guide to the beginner" is a small book of 35 pages printed in small type, and is sold at a remarkably low price, equal to 15 cents in our money. It contains all the necessary instructions for the tyro. Among the subjects treated are the use of various materials, hand and tripod cameras, lens, diaphragms, shutters, color screens and how to use them. How to obtain the time of exposure. The various kinds of plates. The dark room and its furnishings. The development and finishing of negatives. Making prints on various papers, and positives on glass.

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LES PROJECTIONS SCIENTIFIQUES ET AMUSANTES, 1907, by G. Massiot, published by Gauthier-Villars, Paris, France, price 1 Fr.

The Optical lantern can be made very interesting in other ways than using it for the projection of pictures. It becomes a valuable adjunct to scientific lectures, as many experiments in chemistry and physics can easily be shown to a large audience. This book contains a description of a simple lantern and several attachments for projecting instructive and amusing experiments.

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TRAITE DE PHOTOGRAPHIE STEREOSPIQUE, 1906, Charles Fabre published by Gauthier-Villars, Paris, France, price 6.0 Fr.

This volume contains an exhaustive treatise on a much neglected art, stereoscopic photography. The book is well written, contains 207 pages, and 132 woodcuts. It describes all the latest cameras for this kind of work. In short, it gives complete directions including the projection of stereoscopic pictures.

Notes, News and Extracts

The Photographers Association of Iowa. Held their 17th annual convention at Cedar Rapids, April 9, 10, 11 and 12th with the largest attendance and proved to be one of the most successful meetings in the history of the association. The exhibits were many and of very high class. The awards were as follows:

Medlar Trophy, H. M. Anschutz, Keokuk.

Grand Portrait.—(Open to all photographers outside the state) Doty Studio, Belding, Mich.

Class A.—1st, Chas. Townsend, Des Moines; 2d, H. E. Voildand, Albia; 3rd, J. C. Scoles, Oskaloosa.

Class B.—1st, C. H. Gilbert, Independence; 2d, H. E. Voiland, Albia; 3rd, C. A. Engeldow, Vinton.

Class C.—1st, Chas. Wilkinson, Tama, 2d, C. W. Arganbright, What Cheer, 3rd, F. J. Holoubek, Oakland.

Class D.—1st, J. Fritsch, Garner, 2d, F. J. Holoubek, Oakland; 3rd, W. H. Hyink, Alton.

Miniature Class.—1st, L. M. Reid, Ottumwa; 2d, C. H. Gilbert, Independence, 3rd, Chas. Wilkinson, Tama.

The following officers were elected for the ensuing year: President, G. E. Fahr, Bonaparte; First Vice-President, M. J. Tritz, Waterloo; Second Vice-President, H. E. Voiland, Albia; Treasurer, W. W. Ferguson, Denison; Secretary, T. Will Runkle, Cedar Rapids.

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A Simple and Easily Constructed Temporary Lens Flange.—At some time or another most photographers, I think, must have felt the need for a temporary flange or adapter which will enable them to use a lens for the time being in a flange an eighth of an inch or so too large for it.

Such a case as this occurred to me the other day, and I proceeded to meet it by winding paper round the lens tube on that part of it which screws into the flange. The only paper available happened to be blotting paper, and strips of this a quarter of an inch wide were treated with "Higgins" and wound round and round the lens until it was padded out to the right size, when the whole arrangement was put aside to dry. A couple of days later the paste had dried and the ring had contracted so that it was a loose fit in the flange, but in remedying this I found that it had shrunk on to the lens so as to have a perfect thread on it, allowing me to screw the lens in and out of the paper ring, just as if it had been a brass flange. A few more layers were put on, and when these were dry I had little trouble in forming a thread on the outside of the ring also by screwing it into the flange. Finally, with the expenditure of about half an hour, I obtained an adapter which held the lens quite rigidly—it is as firm as a brass one—which would at least allow the lens to be taken out and replaced several times, if necessary, at practically no cost at all for material.

It may perhaps be well to mention that attention must be given to the adapter to make sure that no light creeps in in any part, between it and the flange. If this is so, it may be stopped up with a piece of lantern slide binding, or, if the photographer is very ambitious, he may make a flat cardboard ring and stick this to his adapter in the form of a flange.

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Lest we Forget.—Entries for the Fourth American Photographic Salon must be in the hands of the Pen, Pencil and Camera Club, 1120 Wood Street, Wilkinsburg, Pa., by noon of September 15th, 1907. W. E. Strayer, Secretary of the Federation.

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IS PHOTOGRAPHY A FINE ART?

Craftsman Competition No. V.—Four prizes are offered for the four best papers submitted upon the above subject. This competition grows out of a discussion which has been carried on in the *Craftsman*, but in judging the papers the position taken by the editors of the

Craftsman will not be considered. Those who hold the negative view will be in no wise at a disadvantage on that account.

Papers must not exceed two thousand five hundred words in length. They must be accompanied by photographs for illustration of the position taken by the writers. For example, any writer wishing to prove that a photograph from life is more, or less, artistic than a painted portrait by one of the great masters may submit copies of the photograph from life and the painting (in photograph) for comparison. Or the argument may be rested in whole or in part upon the concrete examples of photography of which copies should be sent. Not more than eight such photographs will be admitted from any competitor.

The prizes offered are, first: handsome high-backed settle or fireside seat, back upholstered in Craftsman leather; second, Craftsman round table, top thirty-six inches in diameter; third, Craftsman rocking chair, hard leather seat; fourth, the Craftsman for one year.

RULES GOVERNING THE COMPETITION.

1. All manuscripts must be legibly written, or typewritten, upon sheets of uniform size and upon one side of the paper only.

2. Manuscripts must not bear the authors' names or addresses, nor any marks enabling their identification except as herein described. Each essay must be signed by a *nom de plume* and have fastened to it a sealed envelope containing the *nom de plume* and the author's correct name and address with the title of the essay.

3. All photographs used as illustrations should be sent flat, not folded.

4. All essays intended for the competition must be in the hands of the editors of the *Craftsman* not later than January 7, 1908.

The Craftsman reserves the right to increase the number of prizes, or to withhold any prize should the papers submitted prove to be unworthy in the opinion of the judges, whose decisions are to be final. It is the purpose of the *Craftsman* in this to maintain a certain standard of excellence.

6. *The Craftsman* reserves the right to publish any prize winning essay in whole or in part.

7. No manuscripts will be received upon which insufficient postage has been paid.

8. *The Craftsman* will not be responsible for the return of rejected manuscripts. Where postage is sent for the purpose within fourteen days from the announcement of the result of the competition, every effort will be made to return them. *The Craftsman* would, however, advise intending competitors to keep duplicate copies of their papers.

9. Manuscripts should be addressed to the *Craftsman,* 29 West Thirty-fourth street, New York City, and marked "Photographic Competition," on the envelope or wrapper.

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THE EFFECT OF HEAT IN CARBON PRINTING.—A useful tip for carbon and bi-gum workers is contained in an article by Herr Struck in the *Photographische Mitteilungen,* who points out that the action of light on the sensitive surface is considerably hastened by heat.

The first test was made with carbon tissue exposed under a Vogel actinometer, which is made of tissue paper, for fifteen minutes, and the whole arrangement of printing frame, etc., was artificially heated. The following tables show the temperatures:—

	a	*b*
At commencement	95° Fahr.	104° Fahr.
After 5 minutes	100° "	113° "
" 10 "	104° "	122° "
" 15 "	98° "	110° "

Strip *a* showed 10° on the photometre, *b* 13° whilst a strip not heated only showed 8°.

With a gum-bichromate paper the variations of temperature ranging from 85°—105° and 85°—122°, the difference in printing in three-quarters of an hour was 8° and 11° instead of 6°.

This proves conclusively that with a given insolation greater effect is produced at higher temperatures than lower. The obvious result from this is that the time of actual printing can be considerably reduced by heat. It does not, however, seem practicable to expose a printing frame as the lid of a metal box, the bottom of which is practically a hot-water bath to keep the carbon tissue hot. But some what similar results can be obtained by exposing to the sun's rays, for the increase in temperature under these conditions is considerably more than is given in the above tables, in summer at least, as was provided by Herr Struck.

The test for this was easily carried out with a plate-box, the lid of which was partly cut away so as to form a frame, in which was placed an ordinary negative. Under this was placed a thermometer and a packing of dark felt, the object of this being to prevent breakage of the thermometer bulb. A paper negative, under a sheet of glass, was also used as a test, thus the arrangement being exactly as one would work with practically. The temperature of the outside air ranged from 68° —78° Fahr., and the following table shows the increase in temperature in the temporary printing frames :—

	Glass negative.	Paper negative.
After 5 minutes	95° — 113°	77° — 87°
" 10 "	98° — 122°	82° — 95°
" 15 "	102° — 132°	86° — 190°
" 20 "	113° — 152°	95° — 107°

These numbers are the highest and lowest numbers of twelve experiments.

From this it is obvious that by exposing carbon tissue to direct sunlight, printing will be much quicker than should be the case, because of the increased temperature. Although the above experiments were carried out in the summer, there would be a considerable increase in temperature in the corresponding reduction of time of printing.

Observations as to the increased action of light on bichromated colloids have been made previously by Eder, Vidal, and MM. Lumière, but not in such detail as here described. It may be as well to point out also that carbon printing may be very well effected by means of magnesium ribbon, as was pointed out twelve years ago, the length of ribbon varying from about 3 to 12 feet, according to the density of the negative, and the distance from the same being maintained at 4 ins.

—*The Photographic News.*

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CREAM CRAYON PLATINOTYPES.—The simplest and most permanent method is to immerse the print in a decoction of either tea or coffee until it acquires the desired tint. A few trial slips will soon determine the exact strength, or time of immersion, to yield the effect you require.

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DEVELOPER FOR ISOCHROMATIC PLATES.—It is difficult to give a really "best" developer for orthochromatic plates, as so much depends upon individual users. Personally, we have a very high opinion of the following, and hope it will give you equal satisfaction :—

A.—Distilled water	214 c. c.	7½ oz.
Citric acid	3 gm.	40 gr.
Pyro	30 gm.	1 oz.
B.—Distilled Water	200 c. c.	7 oz.
Strong Ammonia	23 c. c.	1 oz.
Potassium bromide	8 gm.	120 gr.

For use, dilute one part of A with 19 parts of water, and, in another bottle, one part of B with 19 parts of water. For normal exposures, use equal parts of the diluted solutions. For portraits and under-exposures, add a little more water. In cases of over-exposure, add to each ounce of mixed developer from 10 to 30 finims of 10 per cent. potassium bromide solution.

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GOLD CHLORIDE FROM METALLIC GOLD.—The usual method is (approximately) to dissolve gold in aqua regia, and evaporate the solution to dryness. The residuum is then dissolved in water, and evaporated until the gold chloride crystallises out. For all practical purposes it is sufficient to dissolve the gold in as little aqua regia as necessary (applying heat if rapid solution is desired), and then add distilled water to bring up the bulk to a known strength, such as one grain in each ounce. This acid solution keeps excellently, and may be prepared for use by taking the requisite quantity, and adding enough chalk to neutralize the acidity. In order to reduce it to crystalline form, the concentrated acid solution must be poured into a porcelain evaporating dish, and, by the medium of a sand bath, be evaporated to dryness. The crystals so obtained must be kept in a well-stoppered glass bottle, but it is advisable to weigh them up at once, and dilute them with a specified quantity of distilled water, so that the solution shall represent about one grain of gold chloride in each dram.

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TO REMOVE GLASS STOPPERS.—There are several ways by which they can be moved, druggists usually being very adept at it. They usually hold the bottle in one hand and lightly tap the edge of the stopper outwards, as if trying to knock it off. Very little force must be employed, and it should be exerted by means of a piece of wood shaped something like a rather heavy knife, the motion being a series of light decided taps rather than heavy blows. As a rule, the stopper soon gets loosened, and may be removed. Another plan by which we have generally been successful is to hold the bottle in a cloth and pass the neck (turning it all the time) through the flame from a wax match, just sufficiently long to heat the neck of the bottle. The slight heat is sufficient to expand the glass and permit the stopper to be turned. Another plan, recommended by one of the druggists' journals, is to make a mixture of alcohol two parts, glycerine one part, and salt one part, placing the mixture in the space around the tight stopper ,and allowing it to stand for a few hour, when the stopper can easily be removed.

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Making Moonlight Effects.—Moonlight effects are very popular, and many workers are anxious to know how to produce these effects. The best are often "fakes"; but it is possible to take views by moonlight. In this connection, we extract the following from a reprint, in the Edinburgh Society's "Transactions," of a paper by Robert Dykes:

With a full bright moon, exposures at night are not so lengthy and an open view, such as a large city square, may be taken in four or five minutes, using F6, and a well-backed rapid plate. An open view in the country, free from artificial lighting, under similar circumstances will take half an hour to three-quarters. Bits of road with clumps of trees and perhaps a little thatched cottage help to build up very pretty moonlit views. Care must be taken not to include the moon, or the result will be a long elliptical-shaped mark across the sky as a result of movement. I might state with tolerable accuracy that all night photographs that include a moon are faked. Certainly those sold as postcards are. The method of their produtcion is to snapshot against the sun, and to develop the negative up thin; artificial lights are then put in with the brush. Certainly these faked night pictures are very pretty, but they depend greatly upon cloud effects. and the artificial sources of illumination put in with the brush give a false and very feeble idea of light and shadow. Mr. J. B. Edwards devised a means of including a real moon in the photograph simply by making an exposure on the moon and then capping the lens and waiting until it had moved out of the view, when the exposure was continued. Perhaps this is the best method of putting a moon into the view, and it can be strengthened very considerably by careful local intensification and pencil work.

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A Printing Hint.—There are so very few easy methods of making satisfactory-looking picture post cards from quarter-plate and smaller negatives that I venture to put forward the following idea, which yields pleasing results without any of the laborious double-border printings that need so much care and time.

The only materials needed are the opaque wrapping-papers in which plates are sent out, and some printing-out post cards—matt for preference.

Having decided on the shape of mask most suitable to the negative selected, take one of the wrapping-papers and *tear* a hole in the center of it roughly following the shape and size desired by carefully preserving entire the piece torn out.

It is important to note that the opening must be torn without doubling the paper in two, as if any two of the sides are in the least symmetrical, it considerably detracts from the effect.

Now adjust your torn mask over the negative and print out; next, remove printed post card from the frame, cover the printed part with the piece you have torn out of the mask, which will very slightly overlap all around on account of the "burr" of the tear; replace in the frame on a clean glass, and,holding the frame in the sun for a few seconds, make a graduated tint from corner to corner or end to end of the post card by slowly moving a sheet of black paper backwards and forwards over the print, always keeping one extreme end or corner completely covered and leaving the opposite one free to blacken. Care must be taken not to carry the blackening too far, as a fairly deep tint is all that is necessary.

There are many small variations of this printing "dodge" which will suggest themselves as one works, and many really charming little pictures may be obtained from otherwise worthless negatives by a judicious tearing of the mask to suppress some ugly or superfluous object.

Needless to say, the method is applicable to prints other than post cards, and suits almost any subject that is improved by masking or vignetting.—*The Photogram.*

Trade Notes

Geo. Murphy, Inc. being trade distributing agent of the *American Annual of Photography* and the *British Journal Almanac* 1908, advise that the cost of same will be: American Annual, paper, 75 cents; American Annual, cloth, $1.25. British Journal Almanac, paper, 50 cents; British Journal Almanac, cloth, $1.00.

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We are Very Anxious to regain, if possible, possession of lens No. 200,000 of our manufacture. This lens is a No. 2 Celor and was sold in March to R. J. Golsen, who informs that this lens was part of the stock sold at auction by the receiver. You would greatly oblige by inserting in your next copy a little reading notice containing this request. We will of course give the owner a similar lens or make any ample satisfactory arrangement with him in consideration of his returning the lens No. 200,000 to us. We are more specially anxious to regain possession of this lens as our Berlin office wishes to add it to its collection which contains No. 1, No. 1,000 and No. 100,000,and to which it now also wishes to add the No. 200,000. C. P. Goerz American Optical Company.

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Specimen Sets of "Tabloid" Photographic Chemicals.—In order that photographers may be enabled to make a practical test of "Tabloid" Photographic Chemicals and familiarize themselves with the convenience and reliability of these products, Burroughs, Wellcome & Co., are now issuing specimen sets of "Tabloid" Photographic Chemicals to retail at 15 cents and 30 cents.

Further particulars are given in the booklet which accompanies each set.

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A Second New York Aristo School of Photography will be held under the auspices of Messrs. George Murphy, Inc., 57 East 9th street, New York.

The entire second floor of the building will be devoted to the school. The school will be held September 10th, 11th, 12th during the day and evening and will cover all matters relating to practical photography under the sky light, printing and enlarging. A detailed program will be published and sent to the entire trade.

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The Premo Film Pack has scored a signal triumph in being used exclusively by the United States Military authorities, after many experiments, as the best medium to be used for the system of identification photography whereby every enlisted man in the army is now recorded. The Rochester Optical Division of the Eastman Kodak Co., Rochester, N. Y., have prepared an interesting little booklet on the subject which you may obtain by writing them for one, in case your nearest dealer has no more on hand. It makes good reading.

* * * *

C. L. Mitchell, 1016 Cherry st., Phila., Pa., has a Bromo Developing Powder, that it will be well worth your while to investigate. Better read the advertisement and then we know you'll be anxious to take the chance of getting some samples and try them for yourself.

* * * *

Bausch & Lomb Optical Co. are out with a new lens catalogue that will surely induce you to add a new lens to your outfit. Their capabilities are convincingly shown through the medium of a well selected series of fine art photographs. The catalogue is a tasteful bit of photographic literature and well worth asking for, when you next step in at the dealers. It may also be had by writing direct to the Bausch & Lomb Optical Co. at Rochester, N. Y.